Proposed additions to the genus *Lonchura* (Estrildinae)

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For about nine years, I have been collecting material on the genus *Lonchura* with the aim of producing a simple book of reference for the genus. My primary aim was to produce an accurate, full-colour reference illustration of every adult of every species and subspecies, every adult female where distinct from the male, and every juvenile where distinct from other juveniles. In pursuit of this objective, I have visited most of the countries in the Asia Pacific region where I have made observations of munias in the field, made contacts with various ornithologists, visited museums, met many traders in birds—mostly in Indonesia and Singapore—and visited many bird markets.

During my work with live birds, I have come across several forms that appear to be subspecies, mostly hitherto undescribed. A few have been described previously, but subsequently regarded as synonymous with other races. It is the object of this paper to list each of these cases, and in doing so propose several subspecific additions to the genus. I have followed the guidelines for descriptions proposed by LeCroy & Vuilleumier (1992). Numbered colours refer to Smithe (1981)

SCALY-BREASTED MUNIA *Lonchura punctulata* (Linnaeus)

Linnaeus (1758, p. 173) originally described the Scaly-breasted Munia as coming from Asia. The natural range of the species is from northern Pakistan to Taiwan, and across all of southeast Asia to Sulawesi and Tanimbar. Twelve subspecies are recognised in Peters' *Check-list* (Paynter & Storer 1970). Looking at the map and shading in the countries where the species occurs throws up the apparent anomaly that this ubiquitous and highly adaptable species has not been described on the island of Borneo. Neither Smythies (1981) nor Goodwin (1982) recognise the species as occurring in Borneo. Goodwin (pers. comm.) had overlooked the mention of the species in Harvey & Holmes (1976). A further sighting was recorded by Holmes & Burton (1987), and it is mentioned by MacKinnon & Phillipps (1993) as "a presumably feral population".

A good friend in Jakarta received some munias in 1992, from west Kalimantan. These birds had been caught by her brother who lives in Pontianak, and sent to Jakarta specifically for my study. Over half of the birds were Scaly-breasted Munias. Some months later I visited a known dealer in wild birds, in Jakarta, to inspect a small shipment of munias he had received from Bandjarmarsin, south Kalimantan. There were some 40 Scaly-breasted Munias, which were identical to the birds received from Pontianak. These birds are clearly distinct from any of the geographically nearby races and are described below.

Lonchura punctulata holmesi subsp. nov.

Syntypes. Specimens no. 831281, 831282 and 831283, AMNH. Collected by C. Choa, from Semitau, west Kalimantan (0°30′N, 111°59′E).

Description. The adult male is 105–115 mm long. The wing is 49–52 mm, the culmen 11 mm, and the tarsus 11–12 mm. It is dark cinnamon-brown above with the edges of the wing-coverts broadly bordered with light cinnamon-brown (Smithe 33). From nape to lower back and the wings, but not the paler edgings, it is finely barred with darker wavy lines similar to that on the African Silverbill *L. cantans.* The lower back is olive-brown, graduating to brownish olive-grey on the uppertail-coverts and tail. These latter are barred and edged with very pale straw. The visual effect of the rump to tail is of a much greyer coloration than on any other race. The face is dark reddish-amber, becoming hazel on the outer ear-coverts and sides of the neck where there are a few pinky-white dots. The breast and sides of the breast and flanks are white with the characteristic scale-markings in dark amber. The thighs are amber, spotted and barred with off-white. The underwing-coverts are pale cinnamon with some darker centres to the feathers, and there is some dark edging. The centre of the belly is pale cream. This graduates to very pale straw on the undertail-coverts. There is a variable amount, but always very little, brownish ticking on the undertail-coverts. The bill is bluish-grey, tending to black on the upper mandible. The irides are dark ruby. The legs and feet are dark grey.

The adult female is 103–108 mm long; wing 48–50 mm, culmen 10–11 mm, tarsus 10–11 mm. In coloration the sexes appear to be alike. Males have longer tails, invariably *c.* 5 mm longer. There were no juveniles in either of the two batches of birds. I was able to record the moult of both male and female from what was presumably first-year adult plumage into definitive adult plumage. The only substantial change was a darkening of the upper mandible, while the lower became a more clear pale blue-grey.

Compared to *L. punctulata baweana*, from the island of Bawean, the nearest subspecies geographically, the new subspecies is darker above, more clearly defined on the breast and flanks, and significantly much paler on the uppertail-coverts and edgings to the tail. Compared to *L. punctulata nisoria* from Java, it is overall lighter, particularly on the uppertail-coverts and tail edgings. Compared to both, the new bird has more distinctively-marked upper parts, with fine barring, and the pale quill striations more noticeable.

Etymology. I have proposed the name *Lonchura punctulata holmesi* in recognition of the help and support of Derek Holmes of Jakarta, who first recorded the Scaly-breasted Munia in Kalimantan.

WHITE-RUMPED MUNIA *Lonchura striata* (Linnaeus)

The White-rumped Munia is also an extremely widespread species, ranging from western India across Asia to eastern China. Its southerly limit is Sumatra. Goodwin (1982) follows Paynter & Storer in recognising six distinct subspecies, but makes the gesture of dividing them into two groups: the dark-brown-and-white Indian forms *striata,*

semistriata and *fumigata*; and the more diffuse-brown-and-white eastern forms *acuticauda, subsquamicollis* and *swinhoei*.

According to Paynter & Storer, *L. striata subsquamicollis* ranges from southeastern Burma and southern peninsular Thailand through Indochina and the Malay peninsula to Sumatra. It is a race that varies from the northern part of its range to the south. Northern birds have the patch on the sides of the neck plain orange-brown. In south Malaysian birds this patch has white spots on the lower half. The rump of the northern bird is clear, unmarked cream while that of the southern bird is streaked with brown. The undertail-coverts of northern birds are plain cinnamon, while on southern birds they are cinnamon ticked with dark brown. These observations were recorded by myself in colour drawings made from live birds taken in the northernmost part of the Malaysian peninsula and peninsular Thailand, and birds taken south of Kuala Lumpur.

In the collection at Tring is a single specimen in very poor condition, tail-less, labelled *L. striata explita* from Sumatra. Paynter & Storer say that *L. striata explita* Delacour, 1947 is obviously a lapsus and *nomen nudum*, and considered it synonymous with *L. striata subsquamicollis*. At the time, I disregarded the specimen, despite its looking somewhat different from *subsquamicollis*, being 'dirtier' on the breast. A year later I was visiting the zoology department of the University of Singapore, formerly the Raffles Museum, where I found six good specimens from Sumatra labelled *L. s. striata*. These represent a quite distinct extension to the cline within *L. striata subsquamicollis*, being sufficiently distinct to justify recognition. Chasen & Hoogerwerf (1941) first recognised the form as *L. striata sumatrensis* (a name that has been ignored in most subsequent literature), and I propose reinstating it as such. The birds in Singapore have been relabelled and incorrectly named *L. s. striata*. For clarity of reference I propose taking one of these as the type specimen.

Lonchura striata sumatrensis Chasen & Hoogerwerf

Type. Specimen no. ZRC.3.3500 Nat. Univ. Singapore, male, collected by Robinson and Chasen at Tanjong Kassan, Sumatra, 12 February 1939.

Description. This form differs from *L. striata subsquamicollis*, the nearest race geographically, by being richer brown above, with a noticeable grey to the belly and flanks that is more heavily streaked. The ear-coverts are paler, and the breast is a brighter brown.

Range. The island of Sumatra. Reports of its distribution vary, giving the impression that it is found all over the island, but it is sporadic and only locally common.

FIVE-COLOURED MUNIA *Lonchura quinticolor* (Vieillot)

This species occurs throughout the Lesser Sundas in Indonesia, from Lombok in the west to Tepa in the east. Goodwin recognises only the nominate form, but admits (pers. comm.) to having overlooked the race *wallacii*. White & Bruce (1986) treat *wallacii* as a synonym of

quinticolor. As Goodwin and White & Bruce both point out, the species is variable, but I believe there is a pattern in the distribution of the variations. I have not only studied specimens at Tring and the AMNH, but have examined live birds from many locations in the lesser Sundas, made field observations, and kept many birds in captivity for detailed study.

There is an uneven distribution of body size from east to west. Eastern birds are up to 125 mm long, while western populations do not exceed 115 mm in length. In between, some populations average 105 mm in length, others, exceptionally, 120 mm. I realise that length is not usually recorded, being so unreliable in museum specimens. The measurements I quote are of live birds and have value for comparative purposes.

L. q. quinticolor has the lores, forehead and forecrown chestnut, the rear crown to nape chestnut with blue-grey sub-terminal lines on either side of the quill forming rows of V-markings (with the tip of the V missing). This patterning extends irregularly onto the mantle, which is cinnamon-brown. The superciliary and ear-coverts are cinnamon with whitish-pinkish striations caused by pale feather quills. The chin and throat are reddish-maroon. The wing-coverts and lower back are cinnamon like the back, the wings and tail being a darker brown. The rump, uppertail-coverts and edges to the tail are orange-yellow to straw-yellow. This lightens with age, and is more bright yellow in birds 2–4 years old than in first-year adults. The breast, belly, ventral area and flanks are pure white with a silky texture to the tips of the feathers that gives a shiny, scaly appearance in some lights. The underwing-coverts are creamy-white. The thighs and undertail-coverts are black. The irides are reddish-brown. The bill is blue-grey, tending to lilac at the base. The legs and feet are grey. The distribution of this race is from Alor, through Wetar, Kisar, Sermatta and Babar to Tepa.

In contrast, *L. quinticolor wallacii* has the entire head burnt umber, paler to cinnamon on the ear-coverts, and blackish on the chin and throat. The quill striations on the superciliary and ear-coverts are white, not pink. The mantle and wing-coverts are maroon-chestnut, the wings chestnut, and the tail dark brown. There are faint broken-V-markings on the nape of freshly-moulted birds, but these tend to abrade, leaving solid colour. The rump and uppertail-coverts are maroon or reddish-maroon on the edges of the tail. In other respects it follows the nominate race, but I have never seen the silk effect on the breast of *L. quinticolor wallacii*. The distribution of this race is Lombok and Sumbawa only.

In between these two extremes is a near perfect bridge. That there is some gradation is certain, and I have difficulty in defining the range limitations of each, but there is a distinct third race that I describe below.

Lonchura quinticolor sumbae subsp. nov.

Type. Specimen no. 1898.12.5.60, Brit. Mus. (Nat. Hist.), Tring. Collected by A. H. Everett at Waingapo, Sumba, in 1898.

Figure 1. Distribution of the Five-coloured Munia *Lonchura quinticolor*.

Description. The adult is about 120 mm long. The entire head is maroon with pink quill striations on the superciliary and ear-coverts. There are broken-V-markings on the nape, which often extend from crown to upper mantle. The rump, uppertail-coverts and edging to the tail feathers are all chrome-orange. In other respects it resembles *L. q. quinticolor*, but in a large percentage of the birds of this race that I have seen, the underparts have been washed with cinnamon. These are almost certainly first-year adults because those I have kept for prolonged periods have moulted paler on the breast, and in some cases to white.

My map (Fig. 1) attempts to delineate the three races. The yellow-rumped *quinticolor* is restricted to the eastern end of the range, from East Timor to Sermatta and Tepa. At the western end, the maroon-rumped *wallacii* occurs on Lombok and Sumbawa. The orange-rumped *sumbae* occurs on west and central Flores, Sumba, Sawu, Roti and west Timor. I have no record of descriptions of birds from eastern Flores, Adonara, Lomblen and Bantar.

Etymology. The proposed name is taken from the name of the island where the type specimen was collected.

ALPINE MUNIA *Lonchura monticola* (De Vis)

This is a high altitude grassland species of southwestern Papua New Guinea, normally found between 2800 and 3900 m in the Wharton and Owen Stanley Ranges. There is much anecdotal evidence to suggest the species falls into two distinct types, e.g. Coates (1990), Hicks (1987; pers. comm.) A close examination of the skins in the AMNH shows this division to be subtle, but a real and geographically distinct one, one form occurring in the Wharton Range and the other in the Owen Stanley Range.

The nominate adult from the southwest slopes of Mt. Edward Albert, in the Wharton Range, has the entire front of the head, to the

rear crown, ear-coverts and bib dusky-brown to blackish. The nape is clay-coloured, forming a complete collar that covers the upper breast, and which may be scalloped or streaked with cinnamon. The mantle is dark earth-brown with the basal part of the feathers darker, giving the effect that the back is lightly scalloped with cinnamon. The wings are tawny with darker centres to the feathers. The rump, uppertail-coverts and edges of the blackish tail are straw-coloured. The upper breast is white with slight brown suffusions. A bar of white-scalloped black runs across the lower breast and continues down the flanks. The thighs and undertail-coverts are black. The belly is pale yellowish-buffy. The male and female are alike.

Lonchura monticola myolae subsp. nov.

Syntypes. AMNH specimens no. 421471 from Mt. Scratchley and no. 421469 from Mt. Knotsford in the Owen Stanley Range, Papua New Guinea.

Description. The adult is similar to *L. m. monticola* but differs in having the back clear chestnut, without any mottling or scaling. The belly is the same clear and even white as the upper breast patch. The yellow of the uppertail-coverts is slightly richer than in *L. m. monticola* (noticeably, according to Coates 1990, based on the appearance of live birds in the hand). There is no difference between the sexes.

Etymology. The proposed name *L. monticola myolae* is derived from a place called Myola, in the Owen Stanley Range. A description of the birds there by Roger Hicks (pers. comm.) first drew my attention to the possibility of a different form from the nominate.

THICK-BILLED MUNIA *Lonchura melaena* (Sclater)

This species has only been described from the island of New Britain, PNG. The adult is about 120 mm long. The wing is 54 mm and the culmen 13 mm. The bill is larger and deeper than that of most munias, being some 12 mm deep, and this causes the head to be proportionally larger. The entire head, bib to breast, flanks, thighs, ventral area and undertail-coverts are all black. From the crown to the lower back it is dark olive-brown, while the wings are dark brown. The rump, uppertail-coverts and edges of the tail are chrome-orange. The belly and underwing-coverts are pale cinnamon-rufous to salmon. The black of the flanks forms a series of irregular bars. The irides are brown. The bill is black with pale blue at the base of the lower mandible. The legs and feet are dark grey to blackish. The sexes appear to be similar.

A small hitherto undescribed population has been observed on the island of Buka, north of Bougainville, by Don Hadden (1981), with whom I exchanged correspondence on the subject. Two specimens in excellent condition are in the collection of the museum in Port Moresby, and one mummified and slightly faded specimen is in the AMNH, but this is not catalogued. This form is quite distinct, and I propose recognising it as a new subspecies, as follows.

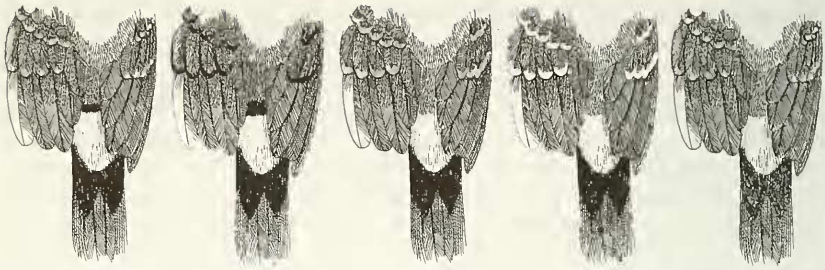

Figure 2. Comparison between the wing-coverts, rump and uppertail-coverts of the four subspecies of the Streak-headed Mannikin *Lonchura tristissima*. Left to right: *L. t. tristissima, L. t. hypomelaena, L. t. calaminoros, L. t. calaminoros* from Karkar Island, *L. t. bigilalae*.

Lonchura melaena bukaensis subsp. nov.

Syntypes. Specimens no. 24361 and 24359 in the collection of the National Museum and Art Gallery, Port Moresby. These birds were taken at Buka airfield (5°15′S, 154°35′E); date and collector not recorded.

Description. Adult about 120 mm long. The wing is 54 mm, the culmen 12–13 mm. This race differs from *L. m. melaena* in being much darker above. The black extends over the entire head and washes over the dark olive-brown back. The wings are dark brown. The rump, uppertail-coverts and edges of the tail are dark scarlet to chestnut (described by Hadden as cinnamon-rufous, but in the specimens I examined they were definitely darker and redder than this). The black on the breast is much more extensive than in *L. m. melaena*. The belly is buffy-salmon.

Etymology. The proposed name derives from the location of origin of the syntypes.

STREAK-HEADED MANNIKIN *Lonchura tristissima* (Wallace)

Coates (1990) refers to "a stable hybrid population" of *L. tristissima* × *L. leucosticta* along the coastal area of the central province of PNG. I looked into this during a visit to the area, and was able to make a close examination of the *Lonchura* specimens in the NMAG, all of which were in excellent condition. I concluded that the supposed hybrids are a perfectly valid and distinct, hitherto undescribed subspecies of *L. tristissima*. In further studying the species at Tring and the AMNH later, I concluded also that the four races of *L. tristissima* recognised by Paynter & Storer can be clearly separated and the confusion about them reduced significantly. The following descriptions are, to the best of my judgement, based on adult males in second-year plumage. I have stressed the key discriminators. Measurements are given only for the nominate form; the other subspecies do not differ noticeably in size. Figure 2 shows the critical parts of the plumage of the different forms, and Figure 3 their distribution.

Figure 3. Distribution of the Streak-headed Mannikin *Lonchura tristissima*.

Lonchura tristissima tristissima (Wallace)

The adult is 105–110 mm long, the wing 52–55 mm, and the culmen 10–11 mm. It is burnt umber above, from forehead to lower back, wings and tail. There are whitish lines on the feather shafts on forehead, crown, superciliaries, lores and ear-coverts. There are faint streaks on the mantle and scapulars. There are whitish terminal spots on the median and greater wing-coverts, and pairs of sub-terminal spots on the tertiaries. In most of the birds that I examined in the AMNH, the edges of the median and greater wing-coverts were broadly marked with Mars brown (Smithe 223A). The rump is mainly brown, with a **narrow bar of black** immediately adjoining the uppertail-coverts. The short uppertail-coverts are straw yellow, the long uppertail-coverts are black. The tail is fuscous. From chin to belly and flanks it is sepia, which becomes black on the thighs, ventral region and undertail-coverts. The underwing-coverts are creamy salmon. The bill is steel blue or violaceous grey. The irides are dark brown. The legs and feet are grey.

Lonchura tristissima hypomelaena (Sresemann & Paludan)

The adult has the face blackish, the rest of the head and upperparts are hair brown. The lower rump forms a **broad black bar**. The short uppertail-coverts are **bright** straw yellow. Below, it is much darker than *L. t. tristissima*, tending to dark greyish-brown becoming black. Males are blacker below than females. Pallid streaks on the sides of the upper breast are more noticeable in the female, and may form a slight barring pattern (Rand & Gilliard 1967). The edges of the median and greater wing-coverts are black, forming **two dark bars**. There may be pairs of pale sub-terminal spots on the tertiaries, which also have dark edges.

Lonchura tristissima calaminoros (Reichenow)

This race differs by having the head and back Prout's brown (Smithe 121A), the wings tending to fuscous. While there are typical whitish

streaks from the forehead to the nape and the outermost ear-coverts, there are none on the mantle or scapulars. There are buffish spots on the lesser and median wing-coverts. The edges of the greater wing-coverts are white or creamy (as distinct from the Mars brown of *L. t. tristissima*, or the black edges of *L. t. hypomelaena*), forming a **pale bar** across the wing. Birds I examined from Dampier Island had extremely sharply defined, clear white wing bars, and this population merits further study. There is **no black** on the lower rump. There are no pale spots on the tertiaries. The short uppertail-coverts are **pale** straw.

Lonchura tristissima bigilalae subsp. nov.

Syntypes. Specimens no. 24984 and 24989, National Museum and Art Gallery, Port Moresby. Collector and date of collection not recorded, but the birds were taken in the general area around Port Moresby.

Description. The adult has the entire body Mars brown, darker on the primaries and tail, ventral region and undertail-coverts. The white streaks run from the forecrown over the head to become faint and buffish on the nape, mantle, scapulars and lesser wing-coverts. The white streaks are noticeably brighter on the hind ear-coverts, sides of neck and sides of the upper breast. The buffish spots on the median wing-coverts become brighter on the greater wing-coverts, forming a distinct bar. There are buffish edges to the tertiaries. The overall appearance is of a more profusely spotted bird than any other race. The centres of the feathers of the sides of the breast and upper flanks are amber. The rump is slightly darker than the mantle and has **no black bar** at all. The short uppertail-coverts are trogon yellow, the long uppertail-coverts being fuscous, and not black as in the other races. As in the other races the females are not easy to distinguish, but tend to be not so brightly spotted and have the yellow of the short uppertail-coverts a little duller.

Etymology. I name this race after Iliah Bigilale, the curator of birds at the NMAG in Port Moresby, who was extremely helpful to me in my work with *Lonchura* during my visit to PNG, and who lent me the entire collection of *Lonchura* specimens for detailed study and making coloured paintings in air conditioned comfort.

Lonchura tristissima undescribed population

There is a population of *L. tristissima* reported (Roger Hicks *in litt.*) from the Kiunga area in the central Western Province of PNG, not far from the border with Irian Jaya, near the Lake Murray region. No details of plumage are known.

WHITE-SPOTTED MANNIKIN *Lonchura leucosticta* (d'Albertis and Salvadori)

This closely-related species is similar to the Streak-headed Mannkin but is easy to separate with its more boldly marked and pronounced white streaks and terminal spots on the head and wings. The adult male

is about 105 mm long, with the wing 45–50 mm, culmen 11–12 mm and tarsus 16–17 mm. It has a very pale cinnamon to white chin, is tawny on the breast, belly and flanks, with white terminal spots, often in an arrowhead shape, that cover the chin, throat, upper breast, sides of breast and upper flanks. The underwing-coverts are salmon to pale buff. The thighs, ventral area and undertail-coverts are black. The female's measurements are similar but the culmen is 10–11 mm. She is more readily distinguished than the female *L. tristissima* by being pale cinnamon on the chin, having brown thighs, and dark brown vent and undertail-coverts. The breast is a less rich tawny. Some females lack white terminal spots on the tertiaries. Juveniles are similar to the adult *L. tristissima* but are distinguished by having a pale chin, which *L. tristissima* never has. The juvenile lacks the straw and black uppertail-coverts.

There is a single specimen in the collection of the NMAG in Port Moresby that was taken locally. The geographic origin separates it by some 500 km from the rest of the range of the species (Fly River to Noord River), and the bird is marginally but significantly different in plumage. It is labelled 'male' by the person who prepared the skin, perfectly competently. It is in excellent condition, and is not a hybrid. Although based on a single specimen, I consider the description of a new subspecies is warranted.

Lonchura leucosticta moresbyae subsp. nov.

Type. Specimen no. 24744, NMAG, Port Moresby. The bird was taken locally, presumably within the environs of the city; the collector is not recorded.

Description. The bird is an adult male; wing length 47 mm, culmen 9 mm, tarsus 14 mm. Above it is similar to *L. l. leucosticta*. Below, the chin is creamy-white, radiating in whitish spots onto the throat, sides of breast and upper flanks. The spots have dark brown sub-terminal marks, and there are also dark brown edges to the feathers on either side of each whitish spot so that each spot is thrown into sharp relief. The underwing coverts are salmon. The tawny of the underparts tends to cinnamon and is more like the colouring of the female *L. l. leucosticta*. The thighs, vent and undertail are dark greyish-brown.

Compared to the nominate race (Fig. 4), this bird has less extensive spotting on the breast and more extensive yellow on the rump. It has a distinctive greyish-brown vent and undertail-coverts. It appears to be marginally smaller, but with only one specimen to compare this is uncertain.

Etymology. The proposed name derives from the locality where the specimen was collected.

WHITE-HEADED MUNIA *Lonchura maja* (Linnaeus)

The White-headed Munia is locally common from southern peninsular Thailand down the Malaysian archipelago to Bali. It is a somewhat variable species, and subspecific divisions have been suggested in the past, e.g. *Munia maja zapercna* and *M. m. simuralensis*,

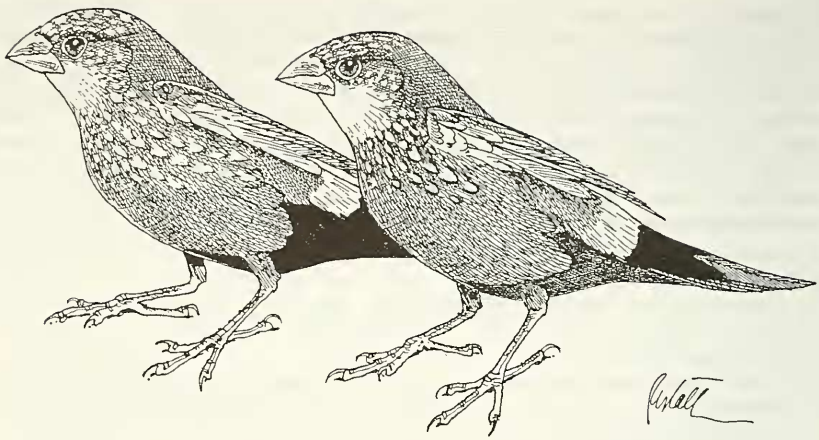

Figure 4. Comparison between *Lonchura l. leucosticta* (left) and *L. l. moresbyae* (right).

both Oberholser 1926. But the variations in colouring are not dramatic and tend to be within a given population rather than exclusive to a defined geographic region. *Lonchura maja* is regarded by Paynter & Storer as being monotypic.

It is widely known in the bird trade in Singapore and Taipei that the White-headed Munia can be obtained from Vietnam. Small numbers of the species are often included in shipments of munias from Ho Chi Minh City, especially if large numbers of Chestnut Munias *L. atricapilla* are involved. I have made several trips to Vietnam in order to verify that these *L. maja* do originate there and are not the result of admixtures of birds from Indonesia. I found the species in two locations. The Vietnamese birds are located in an area quite separated from the main range of the species (Fig. 5). They are also quite distinct, and I propose that they be recognised as a new subspecies.

The adult male of nominate *maja* is up to 120 mm long. The wing is 55–59 mm, the culmen 12–13 mm, and the tarsus 13 mm. The entire head of the first-year adult is off-white with a buffy tinge on the nape. The off-white becomes whiter with successive moults. The buffy nape is also variable with age, and is usually drab (Smithe 119D) in a first-year bird. The breast is a cinnamon-drab or sayal brown (Smithe 223C). The underwing-coverts are dark pinkish-buff. The back is burnt umber, becoming deep reddish-maroon on the lower rump, lower flanks and uppertail-coverts. The upper flanks are a slightly more vinous version of this. From the centre of the lower breast to the undertail-coverts is black. The legs and feet are dark grey, blackish on the large scales.

The adult female is similar but usually sufficiently different to be distinguished. The length is closer to 115 mm, the wing 54–57 mm, the culmen 11–12 mm, and the tarsus 12–13 mm. The buff of the nape is more extensive, reaching the crown and tingeing the bib, which is fawn

Figure 5. Distribution of the White-headed Munia *Lonchura maja*.

colour (Smithe 25). The breast patch is cinnamon-brown (Smithe 33). The breast merges into the upper flanks, which usually join in a soft bar across the lower breast, separating it from the dull black of the belly and undertail-coverts.

Lonchura maja vietnamensis subsp. nov.

Type. Adult male, female and juvenile collected by Charuvarn Vanasin and Dr Atichart Suntharos near Da Lat, 11°56′N by 108°25′E, in January 1995. Other similar birds were collected near the Cambodian border by Tay Ninh, 11°18′N, 106°05′E, in November 1994. These specimens are in my possession at the time of writing; they will be deposited in the AMNH collection in due course.

Description. The adult male is 106–110 mm long, wing 52–56 mm, culmen 12 mm, tarsus 14 mm. From the forehead to nape it is sayal brown (Smithe 223C). The chin and ear-coverts are beige, the superciliaries, lores and the forepart of beneath the eye off-white. The back and wings are Natal brown (Smithe 219A). The rump to tail is rich maroon-red with some crimson glistening on the long uppertail-coverts and central tail feathers. The breast is cinnamon-brown (Smithe 33). The flanks are chestnut (Smithe 32), almost burnt sienna, which joins the uppertail-coverts at the lower flanks. The underwing-coverts are light cinnamon. The thighs are black. From the centre of the lower breast to the undertail-coverts is jet black.. The bill is blue-grey with white cutting edges. The irides are very dark brown, the legs and feet are mid violaceous-grey.

The adult female is 104–106 mm long; the wing 52–54 mm, culmen 12 mm, tarsus 12 mm. It is whitish on the front forehead and around the eyes and sides of face, tinted with pale cinnamon brown. The rear forehead is light drab (Smithe 119C) to dark drab (Smithe 119B) on the

nape. The back and wings are burnt umber. The lower rump is very dark reddish-maroon. The tail is dark brown with mahogany edging to the feathers. From throat to breast it is dark fawn, almost olive-brown. The flanks are chestnut. The underwing-coverts are warm buff with dark brown edges or tips. From the centre of the breast to the undertail-coverts it is dull black. The irides, bill, legs and feet are as for the male.

The juvenile before moulting is 104 mm long. From forehead to back it is light cinnamon-brown to rufous, lightest on the top of the head, darkest on the back and wings. The flights and greater wing-coverts are dark brown, edged with rufous. The lower rump and uppertail-coverts are raw sienna. It is buffish on the throat, around the eyes and ear-coverts, becoming pale clay on the rest of the underparts. The flanks become sayal brown under the wings. The underwing coverts are chamois. The irides, bill, legs and feet are as for the adult.

Compared to nominate *maja* the Vietnamese adult birds are overall darker, especially noticeable on the head where the white is restricted to the area around the eyes and front of face. There is no white on the bib or throat, although the bib of the older male is near white. Put another way, the male and female *L. maja vietnamensis* resemble a dark- and a very dark-headed pair of *L. m. maja*.

Etymology. I have named the Vietnam population of the White-headed Munia *L. maja vietnamensis* from the country of origin.

Lonchura malacca (Linnaeus) and *L. atricapilla* (Vieillot)

Delacour (1943) united three forms of munia usually regarded as three separate species. These were *Lonchura malacca, L. atricapilla* and *L. ferruginosa*. He called the species *Lonchura ferruginosa*, overlooking the fact that *Loxia malacca* (Linnaeus 1766) pre-dated *Loxia ferruginosa* (Sparrman 1789). Since then several writers have queried the wisdom of this. Wolters (1979) regarded *L. ferruginosa* as a good species and Goodwin (1982) and Sibley & Monroe (1990) follow him. Goodwin separated *L. malacca* into two groups, *malacca* types and *atricapilla* types, but retained the concept of a single species. I propose to regard them as distinct and separate species, though they are obviously genetically very close (Kakizawa & Watada 1985). My reasoning is based on both morphological characteristics and behaviour. *L. malacca* occupies a clearly demarcated range in southern India, separate from that of *L. atricapilla* to the east, and there are no intergrades nor hybrids recorded (Ali & Ripley 1987). The 250 km of geography that lie between the two distributions appear to do a good job of keeping them apart.

Within *L. malacca* there are five distinct morphs. By far the most common is the familiar black-headed, chestnut-backed, white breast and flanks, black-bellied bird known as the Tri-coloured Munia. The four variants are: (1) a noticeably irregular zig-zagging division between the white of the flanks and the black of the belly. In pronounced cases this almost takes on the nature of barring. (2) A fine wavy black barring over the white feathers reminiscent of the fine barring on the African Silverbill *L. cantans*. (3) Cinnamon edging to the white feathers giving

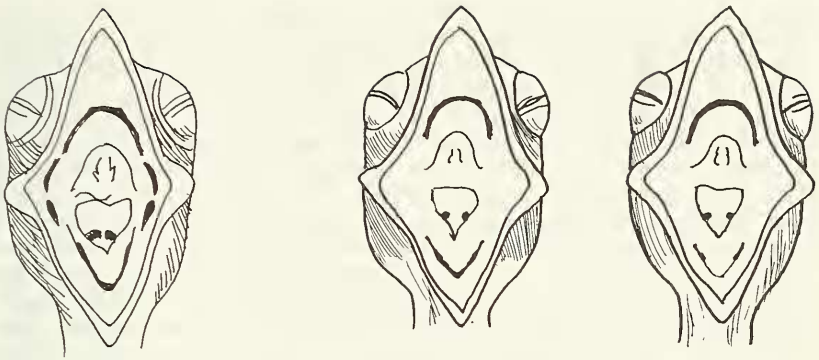

Figure 6. Palate markings of nestlings of *Lonchura malacca* (left), *L. a. atricapilla* (centre) and *L. a. jagori* (right).

a scaled appearance. There is some slight variation within this morph. In some birds the scaling may be bolder than in others. In some birds there may be a wash or light suffusion of cinnamon to the white ground colour. (4) The white is completely suffused with light cinnamon. This also is variable, with some birds having the cinnamon close to the belly colour of the Pallid Munia *L. pallida*. This morph does not look like the Chestnut Munia *L. atricapilla*, the tone of cinnamon never looking like the rich orange-brown of that species.

L. atricapilla has an extensive sprawling range, within which there are some confusing and inconsistent clines (Parkes 1958), some abrupt contrasts, and even some overlap (Andrew & Holmes 1990), where two quite distinct races retain their own integrity, thus raising some very interesting questions.

There is considerable variation within *L. atricapilla*, none of which occurs in *L. malacca*. The head ranges from black to pale grey, brown, or even creamy-grey on the nape. The chestnut of both upper and lower surfaces varies from an orange-cinnamon-rufous to deep, dark chestnut. The lower rump and uppertail-coverts range from deep maroon to yellow. The belly is jet black in some races, chestnut in others, and a full range in between in others. Taking Parkes' (1958) map showing plumage discriminators for some races, and extending it to cover the entire natural range of the species, it is clear there is no trend nor cline, but a haphazard pattern. Significantly, there is no white on any subspecies of *L. atricapilla*, nor as a variant morph within a population.

Although I have not been able to hold live nestlings side by side for comparison, it appears that the palate markings of nestling *L. malacca* are different from those of *L. atricapilla*. (Fig. 6). The similarity of nestling palate markings of *L. a. atricapilla* and *L. a. jagori*, two widely separated races, suggests a homogeneity of the species that supports my thesis.

In behavioural terms, when placed together in captivity or in the wild where one has been introduced into the other's territories, e.g. Hong

Kong, or where both have been introduced, e.g. Honshu, they self-select for partners and pair bonding. The voices are similar, but the calls of *L. malacca* have a vibrato quality lacking in *L. atricapilla*.

Both species occur in the Mai Po marshes in Hong Kong, where the Chestnut Munia is a migrant summer visitor, and the introduced Tri-coloured Munia is a resident. Mixed breeding pairs have not been recorded. Viney *et al.* (1994) refer to intermediates occurring in the Mai Po marshes, where both species breed. This conclusion was drawn from sightings of individual adults of both species flying to the same reed bank, carrying nest-material (C. Viney pers. comm.). Since it is invariably the male that carries nest-material to the nest site, where the female constructs the nest, the sightings could only have been of male birds, and the reasonable inference would be that both species were breeding in the same reed bed, not that the two species were inter-breeding.

I propose that the Tri-coloured Munia *L. malacca* and the Chestnut Munia *L. atricapilla* be accepted as two distinct species, and these notes are written on this basis.

Two Chestnut Munias were included in a collection from south Borneo by Ernst Mayr (1938). These two specimens were collected at Parit; they are referred to by Mayr as *Lonchura atricipalla minuta* (Meyen), and were deposited in the collection at the AMNH. In his paper, he writes ". . . the two birds are darker on the back than even the darkest specimen of a series of nine birds from north Borneo and the Natuna Islands". I had cause to look at these birds in the AMNH subsequently, when I realised that two birds I had painted from southern Borneo fitted his description. It turned out that the two AMNH specimens are now only marginally darker than specimens from northern Borneo, and have probably foxed. This is often the case, for when live birds or fresh specimens of certain colours are compared with older museum specimens there may be a significant difference in colour density and tone.

In July 1991, during a visit to the Jakarta bird market, I found a cage containing 35 or 40 Chestnut Munias. The dealer was known to me as a man who regularly received birds from Kalimantan. He said that these particular birds came from Sampit in Kalimantan Tengah (2°32′S, 112°54′E). This is not far from Parit (3°10′S, 113°43′E), and in any case is not necessarily precisely where the birds were trapped. All the birds were very dark, including the juveniles, certainly darker than any Chestnut Munias I had ever seen before, or since.

I believe that Mayr's birds did represent a previously undescribed form. The name that he used, *minuta*, was given by Meyen to a bird from the variable, but distinct, Philippine population. Two specimens were selected from the Sampit shipment, for which I propose the name

Lonchura atricapilla obscura subsp. nov.

Holotype. Details will appear in a later issue, as logistic problems arising from the author's travels in the Pacific region have prevented the completion of this section—Ed.

Description. The adult is *c.* 105 mm long; wing 52 mm, culmen 12 mm, tarsus 12 mm. The head is entirely black, tending to a very rich deep chocolate on the nape. The back, sides of breast, which barely join across the breast, and flanks are deep, dark chestnut-maroon, wrapping round on the sides of the body to merge into the chestnut of the lower flanks. The wings are deep chestnut, with sepia flights edged with chestnut, the tertiaries being edged with paler chestnut. The tail is sepia, edged slightly with maroon. The underwing-coverts are flesh-ochre. The centre of the lower breast, belly, thighs and undertail-coverts are black. The bill is pale bluish-grey. The irides are chestnut. The legs and feet are grey.

Compared to *L. atricapilla jagori* from northern Borneo (the form is consistent in colouration in northern Borneo, unlike the populations in the Philippines where it is quite variable), the adult is noticeably darker brown above and below, and completely lacks any orange on the uppertail-coverts or edges of the tail feathers.

The juvenile is about 100 mm long. The wing is 50 mm, culmen 11 mm, tarsus 12 mm. The forehead and crown to the lower back are cinnamon-brown, the wings darkening to Prout's brown (Smithe 121A), the median, greater wing-coverts and flights are edged with umber. The chin and throat are pale warm drab to beige. The rest of the underparts are salmon (Smithe 6), the underwing-coverts being particularly richly coloured. I have not been able to compare it directly to juvenile *L. a. jagori* but it is significantly darker and more richly coloured below than the juvenile *L. a. sinensis*.

In May 1990, my friend Linda Santosa in Jakarta received a small private shipment of 8 Chestnut Munias from Pontianak in western Kalimantan. They had been caught in marshland at Selimbau, not far from Semitau, by a relative specially for me to study. I found them to differ from *L. atricapilla jagori* from northern Borneo by having no orange on the uppertail-coverts, only a slightly variable orange edging on the tail. The rump, normally maroon, is a rich red. A second lot of birds arrived in October, and these were identical to the first lot except for the underwing-coverts which were paler, with brown edges. I have treated them as the same in the notes below. I believe this population is sufficiently distinct to justify subspecific status and I name it

Lonchura atricapilla selimbaue subsp. nov.

Type. AMNH specimen no. 831285, collected by C. Choa from Selimbau, Kalimantan Barut, 0°37′N, 112°08′E.

Description. The adult male is 105–110 mm long, wing 52 mm, culmen 11 mm, tarsus 12 mm. It has the entire head and upper breast black. The wings are chestnut, the lower rump and uppertail-coverts are brick red (Smithe 132A). The tail is a deep orange-maroon with a silky orange edging. A narrow bar across the breast and flanks is brick red, slightly darker than the chestnut back. The underwing-coverts are buffy-yellow, or pale buffy-yellow with brown edges. The axillaries are buffy yellow with chestnut centres. The belly, thighs, ventral area and undertail-coverts are black. The line where the black of the belly meets

the brick red of the flanks is irregular as in *L. atricapilla jagori*. The bill is pale bluish-grey. The legs and feet are dark grey.

The female is 98–105 mm long, wing 51–53 mm, culmen 10–11 mm, tarsus 11–12 mm. The entire head is black, but may be dark greyish-brown on the nape. The bar across the breast, the flanks and the upper parts are uniform chestnut. The uppertail-coverts are between brick red and maroon, and the tail is edged with orange. The bill, legs and feet are as in the male.

Etymology. The proposed name is taken from the place of origin of the type specimen.

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Range extensions for some birds in northeastern Brazil

by José Fernando Pacheco & Bret M. Whitney

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Northeastern Brazil from northern Ceará south to the vicinity of Salvador, Bahia is, from the standpoint of the distributions of birds, among the mostly incompletely documented regions in eastern South America. Range delimitations in this region are, however, particularly important to determine as accurately as possible not only to describe the present geographic limits of birds but also to allow well-informed interpretation of the history of events that have resulted in the present picture here and in eastern Amazonia and southeastern Brazil. This part of Brazil was the first to be colonized by Europeans, and has suffered catastrophic loss of its natural habitat cover (Prado 1956, Andrade 1973). Today, as the dry woodlands, caatingas, and relictual humid forests (including the northernmost vestiges of the Atlantic Forest) of northeastern Brazil are being rapidly destroyed or severely altered by man, it becomes ever more difficult to separate the natural distributions of birds from the artificial state that is an inevitable result of such prolonged and concentrated human presence.

During the course of six field expeditions to northeastern Brazil between September and February 1988–1993, we documented with tape recordings the distributions and behaviours of several species of birds threatened with extinction (Collar *et al.* 1992), and some poorly known endemics (e.g. Whitney & Pacheco 1994). Here we report significant northern range extensions for 13 resident and/or migrant species, and southern extensions for three. A number of these are sight records. Included in this report are also five range extensions documented by Heretiano Zenaide (1954), who collected birds between about 1910 and the 1950s in the vicinity of João Pessoa and other points in the interior of the state of Paraíba, very near the northern limits of the Atlantic Forest. Although Zenaide collected and accurately identified many of the species he described in his book (1954), his relatives inform us that no specimens exist today. His rather obscure